

## MEMORANDUM

**DATE:** August 10, 2015

**TO:** Rose Longoria, Yakama Nation and Kristine Koch, EPA Remedial Project Manager

**FROM:** Robert Dexter and Callie Ridolfi

**SUBJECT:** Portland Harbor; Review of draft Final RI

This is to summarize our brief review of the June 2015 Portland Harbor draft Final RI. The comments below are provided generally in order of concurrence in the report.

### Section 1. Introduction

As Yakama has requested previously, the oversight and guidance from the tribes, and other government team members, should be acknowledged, most appropriately in the third paragraph on the first page.

### Section 2. Study Area Investigation

It might be helpful to remind readers in this section, or perhaps in the introduction, that most of the data and other information that is the basis of the RI are five years old or older. Some of the data in Section 2 are nearly 20 years old and much of the chemical data is over a decade old. While in many cases the rates of change in the river characteristics appear to be longer than a decade, care should be taken in assuming that these older data are applicable to specific current locations or processes. It will be important to accurately characterize sites during the remedial design and clean up stages.

### Section 3. Environmental Setting

As noted previously, the Yakama would appreciate more specific emphasis to be placed on the role of the Willamette River as a major tributary to the Lower Columbia River.

The report is fairly accurate in describing the complexity of the shallow groundwater flow over the entirety of the site. Because groundwater may be a continuing source of contamination to the river, this complexity will need to be carefully considered as part of any proposed clean up. Similarly, the status of remediation of upland sites must be kept in mind.

On an editorial basis, in the last line on page 3-22, a flow volume of 118, 300 cfs is given for RM 4.1, which seems high. This value should be checked.

#### Section 5. In-River Distribution of Contamination

This section emphasizes the information obtained for the “indicator” contaminants. Numerous other substances are present at concentrations posing risk to humans or natural resources. The remediation at Portland Harbor will focus on a limited suite of substances, so it will be important to make sure that all other contaminants posing unacceptable risk are addressed in the process.

#### Section 6. Loading, Fate, and Transport of Selected Contaminants

This section should include a discussion regarding the potential for exceptional floods to alter sediment accumulation and erosion. The information in this section is based primarily on a decade or so of lesser winter flows and so may not represent the full range of processes in the river.

#### Section 7. Determination of Background Concentrations

This section should discuss that the background data were collected almost a decade ago and that background is expected to change over time, particularly as inputs to the watershed are controlled. In the FS, a factor should be applied to background to reflect the likely lower concentrations currently entering the site.

#### Section 8. Baseline Human Health Risk Assessment Summary

This section uses the higher cancer risk criterion of  $1 \times 10^{-4}$ , rather than the more protective  $1 \times 10^{-6}$ . While the higher criterion can focus the discussion on the major risks, it downplays the totality of risks at the site. It would be better to use the lower criterion in the text discussion to highlight the extent of the risks.

The uncertainty section overemphasizes the conservative nature of the risk assessment. Many of the factors in the risk assessment could easily underestimate the risks. The discussion should be more balanced.

The text includes a discussion of regional contamination of fish that is irrelevant and misleading. It clearly implies that the problems in Portland Harbor are not just from releases at the site, which seems to downplay the utility of cleaning up the site.

#### Section 9. Baseline Ecological Risk Assessment Summary

Section 9.6.2 includes a discussion of using the Floating Percentile Model (FPM) to calculate sediment quality values. It was our understanding that there was agreement that the FPM would not be used to generate SQVs. This section should be edited to remove the discussion and the FPM-derived SGV values to avoid confusion caused by having a range of SQVs.

It's not clear why Section 9 includes a CSM when a more complete one is included as Section 10. It would be clearer to simply remove the Section 9 CSM discussion.

## Section 10. Conceptual Site Model Summary

As noted above, it would be helpful if the report were more precise about the dates of the information used in the developing this CSM. For example, Section 10.1.3.2 is titled "Current," referring to sources of contamination, but the previous discussions in Section 4 indicate that most of the source data in the RI are at least a few years old. It should be clarified that a) the report is current as of a specific date, and b) that many factors at the site continue to change as time passes.

Section 10.1.4. The discussion of loading should clarify the distinction between loading and concentration. It is reasonable to assume that the large volumes of water and particulates carried by the river were always a major source of the mass of contamination passing through the site, but these loads were not at concentrations sufficient to lead to the high concentrations that are present in the sediments at the local sites. The present discussion could lead the reader to the conclusion that remediation is unnecessary or will be ineffective.